

*Les Vieux Arbres de La Normandie.* By Henri Gadeau de Kerville. Fasc. iv. Pp. 219 + 352. (Paris: J. B. Baillièrre et fils, 1899.)

THIS instalment of M. de Kerville's careful monograph contains twenty views of trees from photographs by the author, accompanied by detailed descriptions and historical notes. The work is well and conscientiously done, whilst the illustrations are well selected and admirably reproduced in collotype. The trees here shown include ten oaks, six yews, two beeches, a lime and a poplar. As the photographs of the deciduous trees have been taken in very early spring, before the opening of the buds, their ramification and general architecture are shown to the greatest advantage. With this volume, *à propos* of a notable oak-tree growing at Isigny-le-Buat, the author includes an interesting account of recorded cases of mistletoe upon oaks in Normandy. He is able to produce evidence in support of some twenty-seven recorded instances. The book will appeal to all tree-lovers; may it stimulate some to similar studies. We remember to have seen something of the kind for Northumberland nearly thirty years ago in the *Transactions* of the Tyne-side Naturalists' Field Club.

### LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

#### The Nature of the Solar Corona.

I SEE in the recently-published number of *Science Abstracts*, No. 802, that there is every reason to think that the corona line is not represented by any dark line in the solar spectrum. I write to call attention to the way this confirms the suggestion that the corona is an aurora round the sun. In the March number of the *Annalen der Physik* for this year, p. 462, Herr Cantor describes experiments from which he concludes that there is no absorption corresponding to the emission of light by a gas which is caused to radiate by an electric discharge. He makes certain deductions as to the temperature of the gas which emphasise the difficulty of defining "temperature" in the case of a non-steady state; but, whatever is to be deduced from his observation, it certainly lends weight to the suggestion that the corona is due to an emission of a similar character to that of a gas transmitting an electric discharge.

April 30.

GEO. FRAS. FITZGERALD.

#### Rock-structures in the Isle of Man and in South Tyrol.

MR. LAMPLUGH'S recent paper referred to in his letter in NATURE of April 26 (p. 612) is devoted to an elucidation of the "relations of the Carboniferous limestone to the Carboniferous volcanic rocks" in the Isle of Man (*Q.J.G.S.* 1900, p. 11). From Mr. Lamplugh's description, these relations are very similar to the relations which I described as subsisting between the Mid-Triassic dolomitic limestone ("Mendola Dolomite") and the tuffaceous "Wengen" beds of Enneberg. The "Buchenstein Agglomerate" of Enneberg, which I mentioned in my letter (NATURE, March 22), had been described in geological literature as a "Middle Triassic agglomerate" of local occurrence above "Mendola Dolomite," in the neighbourhood of eruptive outbursts of that age. My map and sections showed that the agglomerate had a limited occurrence in fault-zones and overthrust-planes where differential movement had taken place between the harder, more resisting "Mendola Dolomite" and the yielding, mixed "Wengen" series "comprising dust-tuffs and lavas, as well as fossiliferous shales and shaly limestones." I therefore explained the so-called "Triassic" agglomerate as a subsequent structure, of the nature of a shear-breccia, produced by the earth-movements of the later Alpine upheaval (*Q.J.G.S.* 1899, pp. 567, 584, Figs. 1, 4, 9, 10).

Mr. Lamplugh describes in the Carboniferous series of the Isle of Man rock-structures of brecciated limestone, tuffs with contained strips of limestone, and coarse agglomerate which had previously been referred to the effects of Carboniferous eruptive

action. Mr. Lamplugh's explanation is that the various complexities in the structure of these rocks "have not been caused by the volcanic outburst, but have been brought about at a later date by the differential movement of segments of the eruptive rocks upon their original floor of limestone" (*Q.J.G.S.* pp. 15, 19, Figs. 3, 4). The parallelism between the two cases is self-evident. In 1894, I had explained on precisely the same principle of subsequent differential movement, the occurrence of certain anomalous phenomena at the upper limit of the Wengen-Cassian series in Enneberg, *i.e.* the limit of this plastic and compressible series against the higher horizon of Triassic calcareo-dolomitic rock, termed "Schlern Dolomite" ("Coral in the Dolomites," *Geol. Mag.* 1894, p. 55).

The parallelism in the general sequence of events in the Isle of Man and in South Tyrol is as follows:—

<i>Isle of Man.</i>	<i>Enneberg.</i>
Pre-Carboniferous Movement.	Pre-Triassic Movement.
Lower Carboniferous Deposition.	Triassic Deposition.
Subsequent Movement.	Subsequent Movement.

The crust-movement immediately antecedent to Triassic deposition in South Tyrol was that which accomplished the upheaval of the Permian Alps, post-Triassic crust-movement culminated in the upheaval of the present Alps (aut. *Q.J.G.S.* 1899, p. 628, and NATURE, Sept. 7, 1899, pp. 445-6).

The farther issues of my paper in showing how differential movements twist the rocks by taking place in cross-directions were not touched in my letter of March 22, for the reason that Mr. Lamplugh did not in his paper enter into the torsional results of differential movements. But, as I have elsewhere expressed, rock-torsion or "warping" goes on all the time in crust-folding, and clearly, where from any cause whatsoever there is the greatest complexity in the differential movements, there will be the greatest complexity in the torsional phenomena.

MARIA M. OGILVIE GORDON.

### POMPEII AND ITS REMAINS.<sup>1</sup>

THE city of Pompeii is one which will ever maintain a hold upon the imagination of cultured man, as much for what it represented in the history of civilisation, as for being the victim of one of the most awful visitations of the powers of nature which have ever befallen the abiding place of a great society of men. It is not the place here to descant upon the wealth and luxury of its

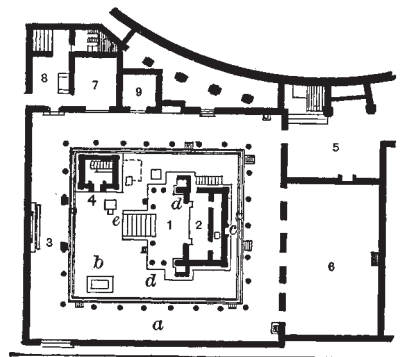


FIG. 1.—Plan of the Temple of Isis.

1, Portico; 2, cella; 3, shrine of Harpocrates; 4, purgatorium; 5, hall of initiation; 6, hall of mysteries; 7, 8, 9, abodes of priests; a, colonnade; b, refuse pit; c, niche for statue of Bacchus; d, d', niches; e, large altar.

inhabitants, on the bright and reckless lives which they led, on the splendour of its buildings, or even the fancied security wherein men and women lulled themselves, notwithstanding the violent shock of earthquake which shook the city to its very foundations on February 5, A.D. 63, for all these things are the commonplaces of history; but we are concerned with the remains left by the awful catastrophe which took place on August 24,

<sup>1</sup> "Pompeii, its Life and Art." By August Mau. Translated by F. W. Kelsey. Pp. xxii + 509. (New York: The Macmillan Co., 1899.)

A.D. 79, and buried the cities of Herculaneum and Pompeii in a layer of mingled mud, lava, pumice stone, dust and wet ashes. In less than thirty-six hours Vesuvius had completely blotted out these towns and had covered the ground around for miles with pumice stones, barely as large as walnuts, to the depth of ten

made themselves very busy, for the costly stones and marble used in the construction of porticos, vestibules and baths, not to mention the pillars, were eagerly sought after for the building of new villas and houses. When such human vultures had battered on the remains of the town, they left what they could not, or would not, carry away to decay and desolation. For fifteen hundred years, Pompeii and its dead slept in peace, and certain pious folk comforted themselves with the view that its inhabitants, like those of the Cities of the Plain, richly deserved their punishment. About A.D. 1600, D. Fontana, who was occupied in bringing water from the Sarno to Torre Annunziata, cut a conduit through a part of the site of Pompeii, and two inscriptions were found in the course of the work. In 1719, Count Elbeuf's workmen sank a shaft on the site of Herculaneum, and reached a level corresponding with the stage of the theatre. In 1754, a number of tombs at Pompeii were discovered by the road-makers who were working to the south of the city, but no systematic attempt to leave what had been excavated uncovered and visible to all was made until 1763, when the discovery of the inscription of Suedius Clemens definitely proved that the site was that of Pompeii. A year later, the theatres, the Street of Tombs, and the villa of Diomedes were un-



FIG. 2.—View of the Temple of Isis.

feet. Of the twenty thousand people who are estimated to have been in Pompeii when destruction came upon the doomed country, about two thousand perished, the rest saved themselves by flight; but fortunately for the people of our own time they were compelled to leave behind them most of the things which describe to the student and antiquary the manner of their lives, and reveal the high standard in luxury and artistic civilisation to which they had attained. The blow fell so suddenly, and the overwhelming of the city was so swiftly and effectively performed, that men and animals had no time to die in the usual manner, and the ashes which caked round them have preserved forms and scenes which, though belonging to the dead and dying, are replete with unerring suggestions of life.

Soon after the city of Pompeii was buried, the survivors came back and began to dig out the objects of value belonging either to themselves or their friends which they knew to be in the houses. As the upper parts of many of the houses still stood above the pumice stone and ashes, they were able to locate them in many instances with convenient accuracy, and as a result there remained in Pompeii, when the searchers had finished work, but few houses which had not been partly or wholly explored. Anything like a systematic search, however, was never made, and the excavators worked most in the places which seemed to promise the best results. Among others, the builders' labourers

covered, and general interest in the work was at last awakened. Between 1806 and 1815, under Joseph Napoleon and Murat, the Herculaneum Gate and Forum were excavated; and between 1825 and 1848, a large number of beautiful houses were cleared out and made accessible to

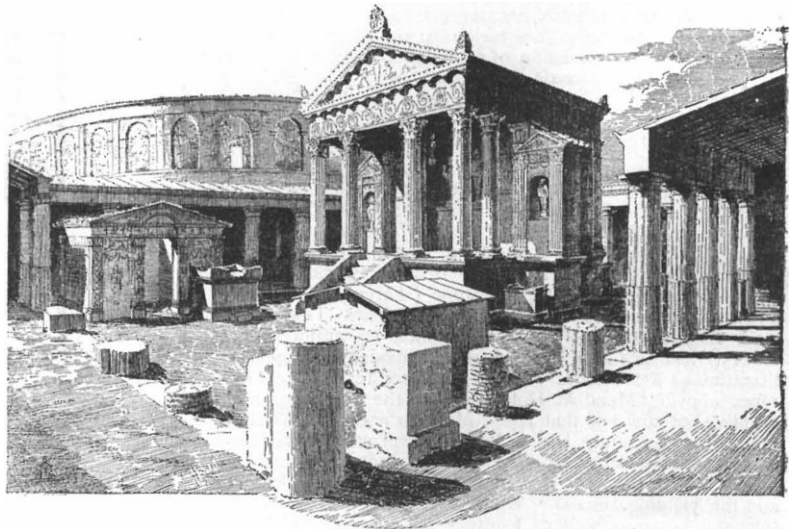


FIG. 3.—The Temple of Isis restored.

the curious and the learned. Up to this period, the work of excavation, though carried on with skill and zeal, was exceedingly unscientific; indeed, judged by the canons of the excavator of to-day, it would be pronounced to possess no system at all. In 1860, however, explorations and

excavations on the site of Pompeii were entrusted to the hands of G. Fiorelli, and most of the excellent results which have attended the excavations made during the last forty years are due to the plan inaugurated by him. At the present time, about one-half of the site of Pompeii has been excavated, and, according to the calculations which he made as far back as 1872, the work of clearing the undisturbed parts in the western half of the ancient city, and the whole of the eastern half, will not be completed much before the year 2000. The above facts will enable the reader to grasp the magnitude of the undertaking, and to appreciate the help which is forthcoming from Prof. Mau's exhaustive work, of which we must now speak briefly.

It is well known that Prof. Mau has for more than a score of years devoted all his winters to the study of the antiquities of Pompeii, and there is little doubt that he is *facile princeps* among the experts in this special branch of Roman archæology. His articles and papers in the scientific periodicals have secured for him a high position among savants, even in his own country, and his "Mittheilungen" are at once the product of good scholarship and enthusiasm. The volume before us is not a mere translation of one previously issued, but is to all intents and purposes a new work, now published for the first time in English. Mr. Kelsey, who is responsible for the English work bearing Prof. Mau's name, is more than the translator, for he has abridged the German manuscript which he had to work from in many places, and a number of additions to the text are due to him. He has done his part of the work faithfully, and the English visitor to Pompeii has now available in his own tongue a volume in which lucidity of treatment goes hand in hand with erudition and scholarship. The English text is accompanied by twelve plates, six plans, and two hundred and sixty-three cuts, which are inserted as near as possible to the subject-matter illustrated by them. We have only one fault to find with the book—it is a little heavy to carry about. Thus having said our worst, we proceed to describe very briefly its contents. The six first chapters really form the introduction, which they are actually called, and they treat of the early history and general situation of Pompeii, the overwhelming of the city, and the excavations undertaken during the last hundred and fifty years. The last chapter of the section on building materials and architectural periods is particularly instructive, and will be read by more than the tourist. Part i. contains twenty-five chapters, which deal exhaustively with the public buildings and places of Pompeii, including the Forum, the Basilica, the Comitium, the theatres, the temples of Jupiter, Apollo, Zeus Milichius, and, strangest of all, the temple of the Egyptian goddess Isis. It will be remembered that the Ptolemies, by the help of Manetho, an Egyptian priest, and of Timotheus, a man who had peculiarly perfect knowledge of the Eleusinian Mysteries, associated certain Egyptian religious ceremonies with those of the Mysteries, in the hope of binding his Greek and Egyptian slaves together in the bonds of a common form of worship. The new cult, though it was abominated by the philosophers, was very

popular, and it spread from Alexandria by way of the Delta into Syria, and from the same centre to Rome. As a result, we find that a college of priests of Isis, or Pastophori, was founded at Rome in the time of Sulla, about B.C. 80. The Romans objected to the introduction of the Egyptian gods, and three times in the space of eleven years was their temple destroyed. Oddly enough, a temple in honour of Osiris and Isis was built in Rome about B.C. 44, and before the end of the century their festival was recognised by the public calendar. But other cities of Italy were more tolerant than Rome, for a temple in honour of Serapis was standing at Puteoli B.C. 105, and not long after this date the temple to Isis was built at Pompeii. In the earthquake which took place A.D. 63 this temple suffered greatly, but it was rebuilt by Numerius Popidius Celsinus at his own expense "from the foundation." From the view given by Prof. Mau on p. 166, we see enough to show us



FIG. 4.—The adoration of the holy water of the Nile during the worship of Isis.

that although the building bore slight resemblance to an Egyptian temple, there was, notwithstanding, a wish on the part of the architect to produce an unwonted effect on the mind of the beholder. The deities Osiris, Isis, Anubis and Harpocrates were represented by statues, and as they have never been found, it is probable they were carried off by the faithful on that awful day in August, A.D. 79. We know little of the ceremonies connected with the initiation into the Mysteries, but two skulls, a marble hand, two small boxes, a gold cup, a small glass vessel, and a statuette of the god nearly one inch in height seem to have played a prominent part in them. We have not space to follow Prof. Mau through his description of all the various parts of this interesting temple, but we may note that the existence of the hieroglyphic sepulchral inscription, set up for the scribe Hat on a pillar to the right of the altar, indicates the adoption in Pompeii of a widespread Egyptian custom. The

worship of Isis attracted large numbers to her temple, and the principal services took place before daybreak. The curtains were drawn aside and the statue of the goddess was presented to her worshippers, who straightway prayed to her; an hour after sunrise a hymn was sung to the rising sun, typified by Harpocrates, and the service was over. The second service of the day was held two hours after noon, and it seems to have consisted in the adoration of water in a vessel which was supposed to have been taken from the Nile. Whatever the details may have been, the services certainly had reference to scenes connected with the finding of the dead body of Osiris by his wife Isis, and they were intended to urge the beholder to renounce the present life and to prepare for a second birth into a purified and beatified state of existence in a new world. The temple of Isis at Pompeii is a remarkable relic of the adoption of a remarkable religion by the Romans, and we hope that Prof. Mau will add any new facts which he may glean from subsequent researches to the future editions of his work. The second part of Prof. Mau's volume deals with the houses of Pompeii, and it seems to us to be the best in the book, for it recalls the scenes and occurrences in the daily household life of the Pompeians in a most realistic fashion. The mind's eye has so many facts supplied to it with such lucid explanations that a street of houses appears before it without fatigue, and as the result of but little effort. Parts iii.-vi. deal with trades and occupations, the tombs, Pompeian art and inscriptions; the chapters of these sections are written in the same easy style, but at the same time the reader feels that he is being led along an interesting path by the hand of a master of his craft.

#### THE UNVEILING OF THE HUXLEY MEMORIAL STATUE.

THE statue, by Mr. Onslow Ford, R.A., of the late Right Hon. Thomas Henry Huxley, now placed in the first right-hand recess of the Great Hall of the Natural History Museum, was unveiled by H.R.H. the Prince of Wales on Saturday last, April 28, the ceremony being performed, by his Royal Highness's desire, immediately after the meeting of the Trustees appointed for that day.

Seating accommodation had been provided for the Huxley family, the Trustees of the British Museum, the members of the Memorial Committee, and other distinguished guests and chief subscribers to the Memorial Fund, in front of the statue; and a still greater number of persons, most of whom were subscribers also, assembled in the corridors overlooking the Great Hall, and on the staircases.

There were from 700 to 800 persons present, adequately representative of all branches of science, art, law, music, and politics, and of several foreign nations. The following is a classified list of the persons more directly concerned in the ceremony:—

#### Trustees of the British Museum.

H.R.H. the Prince of Wales.	Dr. W. S. Church, President of the Royal College of Physicians.
Earl of Elgin, K.G.	The Rev. F. H. Annesley.
Earl of Hopetoun.	Mr. Cavendish-Bentinck.
Viscount Cross.	The Duke of Devonshire, K.G.
The Bishop of Winchester.	The Duke of Devonshire, K.G.
The Lord Walsingham.	Lord Russell of Killowen.
The Right Hon. Sir George Trevelyan, Bart.	Lord Avebury.
The Right Hon. John Morley, M.P.	Viscount Peel.
Sir Nathaniel Lindley, Master of the Rolls.	Viscount Dillon.
	Sir John Evans, K.C.B.
	Sir Richard Webster.

#### Executive Committee of the Memorial Fund and others.

Lord Shand (Chairman).	Dr. P. L. Sclater, F.R.S.
Sir Joseph Fayrer, Bart., K.C.S.I., F.R.S.	Prof. G. B. Howes, F.R.S. (Hon. Secretary).
Sir Henry Thompson, Bart.	Mrs. Huxley and members of the Huxley family, to the number of thirty-two.
Sir Joseph Hooker, G.C.S.I., C.B., F.R.S.	Sir E. Maunde Thompson and Officers of the British Museum, Bloomsbury.
Sir John Donnelly, K.C.B.	Prof. E. Ray Lankester, the Director, and the Officers of the British Museum (Natural History).
Sir Norman Lockyer, K.C.B., F.R.S.	
Sir Michael Foster, K.C.B., M.P., F.R.S.	
Sir Spencer Walpole, K.C.B.	
Sir A. Geikie, F.R.S.	
Mr. Briton Riviere, R.A.	

Among other persons who were seated in the central enclosure were the following:—

Sir F. Abel, Bart., F.R.S.	Lord Hobhouse, K.C.S.I., C.I.E.
Prof. T. Clifford Allbutt, M.D., F.R.S.	Prof. Victor Horsley, F.R.S.
Sir L. Alma-Tadema, R.A.	Prof. J. W. Judd, C.B., F.R.S.
Sir Edwin Arnold, K.C.I.E., C.S.I.	Right Hon. W. E. H. Lecky, M.P.
The Attorney-General.	Sir Hugh Low, G.C.M.G.
Dr. Alfred Austin.	Dr. P. Manson.
Sir Squire Bancroft.	Dr. Ludwig Mond, F.R.S.
Hon. Edmund Barton, Q.C.	Prof. R. Meldola, F.R.S.
Prof. Bastian, F.R.S.	Sir Francis Mowatt, K.C.B.
Sir Lowthian Bell, Bart., F.R.S.	Sir Andrew Noble, K.C.B., F.R.S.
Mr. Horace Brown, F.R.S.	Admiral Sir Erasmus Ommanney, Bart., C.B., F.R.S.
Sir T. Lauder Brunton, M.D., F.R.S.	Prof. J. Perry, F.R.S.
Rt. Hon. L. Courtney, M.P.	Sir W. C. Roberts-Austen, K.C.B., F.R.S.
Sir Wm. Crookes, K.C.B., F.R.S.	Sir Henry Roscoe, F.R.S.
Mr. Francis Darwin, F.R.S.	Prof. A. W. Rüchker, F.R.S.
The Earl of Ducie, F.R.S.	Sir J. S. Burdon-Sanderson, Bart., F.R.S.
Sir W. Thiselton-Dyer, K.C.M.G., F.R.S.	Dr. D. H. Scott, F.R.S.
Mr. R. Etheridge, F.R.S.	Sir G. G. Stokes, Bart., F.R.S.
Prof. J. B. Farmer, M.A.	Prof. G. Johnstone Stoney, F.R.S.
Lady Flower.	Mr. J. J. H. Teall, F.R.S.
Prof. Le Neve Foster, F.R.S.	Prof. T. E. Thorpe, F.R.S.
Dr. R. Garnett, C.B.	Prof. W. A. Tilden, F.R.S.
Dr. J. H. Gladstone, F.R.S.	Rev. Canon Tristram, F.R.S.
Lieut.-Col. Godwin-Austen, F.R.S.	Sir William Turner, F.R.S.
Dr. A. Günther, F.R.S.	Prof. W. F. R. Weldon, F.R.S.
Mr. G. Henschel.	

Foreign nationalities were represented by:—

Dr. F. P. Moreno (of the Argentine Republic).	Prof. G. Paladino (of Naples).
Major Dr. von Wissmann (Germany).	Prof. G. Gilson (of Louvain).
Mons. L. Geoffroy (France).	Señor Don Pedro Jovar y Tovar (Spain).
Mons. F. Fuchs (Congo Free State).	Count Bottaro Costa (Italy).
Prof. Batalha Reis (Portugal).	Plenipotentiaries at the International Conference for the preservation of wild animals in Africa.

Punctually at the time appointed (1.15 p.m.), his Royal Highness took up a position to the spectators' left of the statue, supported by the Standing Committee of the Trustees of the Museum, with Sir Maunde Thompson and Prof. Ray Lankester; while Sir Joseph Hooker, similarly supported by the members of the Executive of the Memorial Committee, stood on the right; the sculptor, Mr. Onslow Ford, being in proximity to the statue.

The proceedings were opened by Prof. Ray Lankester, with the following introductory statement:—

YOUR ROYAL HIGHNESS, MY LORDS, LADIES AND GENTLEMEN,—The duty of briefly explaining the nature of the present proceedings has devolved upon me. I feel it to be a great privilege to discharge this duty on the occasion designed to do honour to my venerated master, Prof. Huxley. This